What Is Claimed Is:

1. Apparatus for inserting a surgical fastener through a plurality of portions of material from within an endovascular pathway, said apparatus comprising:

a surgical fastener having first and second ends and made from a material which enables said fastener to be transformed from a first stressed elongate shape to a second unstressed shape upon the release of said fastener from a stressed condition, said first stressed elongate shape of said fastener enabling said first end to be extended through a plurality of layers of material, and with said second shape of the fastener being in the form of a spring with a plurality of coils around a spring axis, with said coils being spring biased towards each other along said spring axis with sufficient axial force so as to enable coils on opposite sides of layers to clamp the layers of material together along the spring axis;

a delivery tube having third and fourth ends, first and second tube portions adjacent to said third and fourth ends, respectively, and forming a longitudinal axis between the third and fourth ends, said delivery tube including a material which enables transformation from a third stressed elongate shape to a fourth unstressed shape upon the release from a stressed condition to an unstressed condition, said third stressed elongate shape enabling said third end to be extended through an endovascular pathway, said fourth unstressed shape being formed with said first and second tube portions being configured at an angle to one another;

delivery tube deployment means being configurable between a first position and a second position, said first position of said delivery tube deployment means restraining said delivery tube in said third stressed elongate shape, and said second position of said delivery tube deployment means releasing said delivery tube in the fourth unstressed shape;

penetration means adjacent said third end of said delivery tube, said penetration means being configured to pierce through a vascular structure in the endovascular pathway; and

insertion means adjacent to said first end of said delivery tube, said insertion means being configured to place said surgical fastener through the vascular structure pierced by said penetration means.

2. Apparatus for endovascular surgery according to claim 1 further comprising a plurality of delivery tubes and each of said delivery tubes being controlled by said delivery tube deployment means.

3. Apparatus for endovascular surgery according to claim 1 wherein said material has super-elastic properties.

4. Apparatus for endovascular surgery according to claim 3 wherein said super-elastic material is Nitinol.

5. Apparatus for endovascular surgery according to claim 1 wherein said penetration means is a sharpened cutting edge formed on said third end of said delivery tube.

6. Apparatus for endovascular surgery according to claim 1 wherein said penetration means is a sharpened cutting edge formed on said first end of said surgical fastener.

7. Apparatus for endovascular surgery according to claim 1 wherein the angle of said second unstressed shape of said delivery tube formed with said first and second tube portions angled to one another is dependent on the diameter of said vascular structure of the endovascular pathway.

8. Apparatus for endovascular surgery according to claim 1 wherein said insertion means is a plunger being configured within said delivery tube, said

plunger having first and second portions, said first and second portions being configured adjacent said third and fourth ends of said delivery tube, respectively, said first end of said plunger being configured adjacent said second end of said fastener, whereby movement of said plunger a predetermined distance toward the third end of said delivery tube forces said fastener through said vascular structure a distance corresponding to said predetermined distance.

9. Apparatus for endovascular surgery according to claim 1 further comprising a guide wire having a given stiffness for allowing positioning within the endovascular pathway of said vascular structure, said guide wire having a longitudinal axis, said first stressed elongate shape of delivery tube being configured in parallel to said guide wire.

10. Apparatus for endovascular surgery according to claim 9 further including a balloon catheter supported by said guide wire.

11. Apparatus for endovascular surgery according to claim 10 wherein said balloon catheter provides a reference for the proper placement of said fasteners.

12. Apparatus for endovascular surgery according to claim 1 wherein said delivery tube deployment means is an inner sheath having first and second ends, being in surrounding configuration parallel to said longitudinal axis of, and along a portion of, said delivery tube, being in slideable configuration from a first distance to a second distance from said third end of said delivery tube, wherein withdrawal away from said third end and advancement toward said third end of said inner sheath controls the angle of said delivery tube.

13. Apparatus for endovascular surgery according to claim 1 further comprising an endovascular graft being in surrounding configuration to said third end of said delivery tube wherein said surgical fastener

delivered by said delivery tube attaches said endovascular graft to the vascular structure in the endovascular pathway.

14. Apparatus for endovascular surgery according to claim 13 wherein said apparatus further includes a balloon catheter supported by a guide wire, and further wherein said balloon catheter provides balloon inflation to ensure full expansion of said graft to the wall of said vascular structure.

15. Apparatus for endovascular surgery according to claim 13 wherein said endovascular graft is constructed of Dacron/PTFE material.

16. Apparatus for endovascular surgery according to claim 13 wherein said endovascular graft is at least partially surrounded by a stent.

17. Apparatus for endovascular surgery according to claim 16 wherein said stent is a partial exoskeleton surrounding said endovascular graft.

18. Apparatus for endovascular surgery according to claim 16 wherein said stent is a complete exoskeleton.

19. Apparatus for endovascular surgery according to claim 1 further comprising an outer endovascular delivery sheath being in slideable, surrounding configuration to selectively cover a portion of said delivery tube from said third end to said fourth end.

20. Apparatus for endovascular surgery according to claim 1 wherein the vascular structure is an aorta.

21. A method for inserting a surgical fastener through a plurality of portions of material from within an endovascular pathway, said method comprising:

providing apparatus for inserting a surgical fastener through a plurality of portions of material from within an endovascular pathway, said apparatus comprising:

a surgical fastener having first and second ends and made from a material which enables said fastener to be transformed from a first stressed elongate shape to a second unstressed shape upon the release of said fastener from a stressed condition, said first stressed elongate shape of said fastener enabling said first end to be extended through a plurality of layers of material, and with said second shape of the element being in the form of a spring with a plurality of coils around a spring axis, with said coils being spring biased towards each other along said spring axis with sufficient axial force so as to enable coils on opposite sides of layers to clamp the layers of material together along spring axis;

a delivery tube having third and fourth

ends, first and second tube portions adjacent to said third and fourth ends, respectively, and forming a longitudinal axis between the third and fourth ends, said delivery tube including a material which enables transformation from a third stressed elongate shape to a fourth unstressed shape upon the release from a stressed condition to an unstressed condition, said third stressed elongate shape enabling said third end to be extended through an endovascular pathway, with said fourth unstressed shape being formed with said first and second tube portions being configured at an angle to one another;

delivery tube deployment means being configurable between a first position and a second position, said first position of said delivery tube deployment means restraining said delivery tube in said third stressed elongate shape, and said second position of said delivery tube deployment means releasing said delivery tube in said fourth unstressed shape;

penetration means adjacent said third

end of said delivery tube, said penetration means being configured to pierce through a vascular structure in the endovascular pathway; and

insertion means adjacent to said first end of said delivery tube, said insertion means being configured to place said surgical fastener through the vascular structure pierced by said penetration means;

placing said delivery tube adjacent said vascular structure, with said delivery tube being configured in said third stressed elongate shape;

deploying said delivery tube from said third elongate shape to said forth elongate shape with said delivery tube deployment means, said deployment of said delivery tube placing said third end adjacent to the vascular structure in the endovascular pathway;

penetrating the vascular structure in the endovascular pathway with said penetration means, said penetration of the vascular structure being performed at said third end of said delivery tube; and

inserting said surgical fastener through the plurality of portions of material using said insertion

means, said insertion of said surgical fastener being performed from inside of said vascular structure.

22. A method according to claim 21 wherein the step of placing said delivery tube adjacent said vascular structure includes using a guide wire to position said delivery tube.

23. A method according to claim 21 wherein the said delivery tube deployment means is an inner sheath having first and second ends, being in surrounding configuration parallel to said longitudinal axis of, and along a portion of, said delivery tube, being in slideable configuration from a first distance to a second distance from said third end of said delivery tube, wherein withdrawal away from said third end and advancement toward said third end of said inner sheath controls the angle of said delivery tube, and the steps of deploying said delivery tube from said third elongate shape to said fourth elongate shape includes withdrawal of said inner sheath away from said third

end of said delivery tube, and advancement of said inner sheath toward said third end of said delivery tube returns said delivery tube from said fourth elongate shape to said third elongate shape.

24. A method for according to claim 23 wherein the step of deploying said delivery tube from said third elongate shape to said fourth elongate shape is an incremental process and is directly proportional to the distance said inner sheath is withdrawn relative to said third end of said delivery tube.

25. A method according to claim 21 wherein said penetration means used in the step of penetrating the vascular structure in the endovascular pathway is a sharpened cutting edge formed on said third end of said delivery tube.

26. A method according to claim 21 wherein said penetration means used in the step of penetrating the vascular structure in the endovascular pathway is a

sharpened cutting edge formed on said first end of said surgical fastener.

27. A method according to claim 21 wherein said insertion means used in the step of inserting said surgical fastener through the plurality of portions of material is a plunger sized to slidingly move through said delivery means to advance said surgical fastener toward said third end of said delivery tube.

28. A method according to claim 21 further comprising the step of withdrawing said delivery tube away from the plurality of portions of material to release said surgical fastener from said stressed condition on said second end of said surgical fastener whereby said surgical fastener clamps the plurality of layers of the material together.

29. A method according to claim 21 wherein one of said plurality of portions of material comprises a vascular structure, and further wherein another of

said plurality of portions of material comprises a graft.

30. A method according to claim 29 wherein said apparatus for inserting a surgical fastener is positioned in the vascular structure prior to placement of said graft adjacent to said vascular structure.

31. A method according to claim 29 wherein said graft is placed in said vascular structure prior to positioning said apparatus for inserting a surgical fastener in said vascular structure.